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In the Claims:

Please amend the claims as follows:

1. (previously presented) A method of modulation detection, comprising:

receiving a signal;

generating a first decision statistic based on the received signal the first decision statistic generated using an embedded interference-canceling algorithm;

phase rotating the received signal;

generating a second decision statistic based on the phase rotated received signal the second decision statistic generated using an embedded interference-canceling algorithm; and

determining a selected modulation type based on comparing the first decision statistic with the second decision statistic.

2. (original) The method according to claim 1, further comprising generating an observation matrix from the received signal, wherein the first decision statistic is generated based on the observation matrix.

3. (original) The method according to claim 1, further comprising generating an observation matrix from the phase-rotated received signal, wherein the second decision statistic is generated based on the observation matrix.

4. (original) The method according to claim 1, wherein the step of determining a selected modulation type further comprises:

comparing the first decision statistic with the second decision statistic;

determining a desired modulation to be a first modulation type if the first decision statistic is less than or equal to the second decision statistic; and

determining a desired modulation to be a second modulation type if the second decision statistic is less than the first decision statistic.

5. (original) The method according to claim 1, wherein the step of determining a selected modulation type determines the selected modulation type to be at least one of a Gaussian minimum shift keying modulation type and an octal phase shift keying modulation type based on comparing the first decision statistic with the second decision statistic.

6. (original) The method according to claim 1, wherein generating a first decision statistic further comprises generating the first decision statistic based on four bursts comprising a radio link control bock of the received signal.

7. (currently amended) The method according to claim 1, wherein the first decision statistic is generated according to $\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}$ $\underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}}$.

8. (currently amended) The method according to claim 1, wherein the second decision statistic is generated according to $\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}$

$\underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}}$.

9. (original) A method of modulation detection, comprising:

receiving a signal;

constructing a first decision statistic based on a first hypothesized modulation type including interference suppression based on the received signal;

constructing a second decision statistic based on a second hypothesized modulation type including interference suppression based on the received signal; and

identifying a selected modulation type based on a comparison of the first decision statistic and the second decision statistic.

10. (original) The method according to claim 9, wherein the first hypothesized modulation type is a Gaussian minimum shift keying modulation type.

11. (original) The method according to claim 9, wherein the second hypothesized modulation type is an octal phase shift keying modulation type.

12. (original) The method according to claim 9, further comprising:

transforming the received signal,

wherein the second decision statistic is based on the transformed received signal.

13. (original) The method according to claim 12, wherein transforming the received signal further comprises phase rotating the received signal.

14. (currently amended) The method according to claim 9, wherein the first decision statistic is generated according to $\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}$ $\underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}}$.

15. (currently amended) The method according to claim 9, wherein the second decision statistic is generated according to $\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}$ $\underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}}$.

16. (original) The method according to claim 9, wherein the step of identifying a selected modulation type further comprises:

comparing the first decision statistic with the second decision statistic;

determining a desired modulation to be a first modulation type if the first decision statistic is less than or equal to the second decision statistic; and

determining a desired modulation to be a second modulation type if the first decision statistic is less than the second decision statistic.

17. (original) The method according to claim 16, wherein the first modulation type is a Gaussian minimum shift keying modulation type.

18. (original) The method according to claim 16, wherein the first modulation type is an octal phase shift keying modulation type.

19. (original) The method according to claim 9, wherein constructing a first and second decision statistic further comprises constructing the respective first and second decision statistics based on four bursts comprising a radio link control block of the received signal.

20. (previously presented) A method of modulation detection, comprising:

receiving a signal;

generating a first observation matrix from the received signal;

computing first decision statistic from first observation matrix the first decision statistic generated using an embedded interference-canceling algorithm;

phase-rotating the received signal;

generating a second observation matrix from the phase-rotated received signal;

computing a second decision statistic from the second observation matrix the second decision statistic generated using an embedded interference-canceling algorithm;

comparing the first decision statistic with the second decision statistic;

determining a desired modulation to be a Gaussian minimum shift keying modulation if the first statistic is less than or equal to the second statistic; and

determining a desired modulation to be an octal phase shift keying modulation if the second statistic is less than the first statistic.

21. (previously presented) A communication device comprising:

a receiver configured to receive a signal; and

a modulation detector configured to detect a modulation type of the received signal, the modulation detector including:

a first decision statistic generator configured to generate a first decision statistic based on the received signal the first decision statistic generated using an embedded interference-canceling algorithm;

a phase rotator configured to phase rotate the received signal;

a second decision statistic generator configured to generate a second decision statistic based on the phase rotated received signal the second decision statistic generated using an embedded interference-canceling algorithm; and

a determination module configured to determine a selected modulation type based on comparing the first decision statistic with the second decision statistic.

22. (original) The communication device according to claim 21, wherein the first decision statistic generator is further configured to generate an observation matrix from the received signal, wherein the first decision statistic is generated based on the observation matrix.

23. (original) The communication device according to claim 21, wherein the second decision statistic generator is further configured to generate an observation matrix from the phase-rotated received signal, wherein the second decision statistic is generated based on the observation matrix.

24. (original) The communication device according to claim 21, wherein the determination module is further configured to determine a selected modulation type by comparing the first decision statistic with the second decision statistic, determining a desired modulation to be a first modulation type if the first decision statistic is less than or equal to the second decision statistic, and determining a desired modulation to be a second modulation type if the second decision statistic is less than the first decision statistic.

25. (original) The communication device according to claim 21, wherein the determination module is further configured to determine a selected modulation type by determining the selected modulation type to be at least one of a Gaussian minimum shift keying

modulation type and an octal phase shift keying modulation type based on comparing the first decision statistic with the second decision statistic.

26. (original) The communication device according to claim 21, wherein the first decision statistic generator is further configured to generate a first decision statistic by generating the first decision statistic based on four bursts comprising a radio link control bock of the received signal.

27. (currently amended) The communication device according to claim 21, wherein the first decision statistic is generated according to $\cancel{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0)\mathbf{b}}$ $\underline{\varepsilon_0 = \mathbf{b}^T(I - \mathbf{Z}_0(\mathbf{Z}_0^T\mathbf{Z}_0)^{-1}\mathbf{Z}_0^T)\mathbf{b}}$.

28. (currently amended) The communication device according to claim 21, wherein the second decision statistic is generated according to $\cancel{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1)\mathbf{b}}$ $\underline{\varepsilon_1 = \mathbf{b}^T(I - \mathbf{Z}_1(\mathbf{Z}_1^T\mathbf{Z}_1)^{-1}\mathbf{Z}_1^T)\mathbf{b}}$.